In the Claims

Please cancel claim 27.

Please amend claims 1, 2, 12, 22, 25, 26, and 28 as follows:

1. (Twice Amended) A no-flow underfill material comprising:

an epoxy-based resin including oxirane grafted silica particles;

at least one agent acting as a cross-linking hardener and a curing catalyst capable of catalyzing the curing of the epoxy-based resin; and

a fluxing agent.

2. (Twice Amended) The material of claim 1 wherein the epoxy-based resin is represented by:

$$R1 — R3 — R2$$

where R1 includes SiO_2

R2 is a reactive organic functional group, and

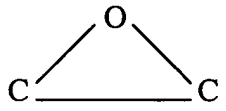
R3 is an organic chain segment.

3. The material of claim 2 wherein R1 is a surface-grafted fused silica particle with a size less than 50 microns.

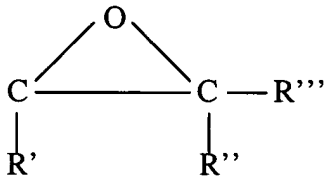
4. (Once Amended) The material of claim 3 wherein a structure of R1 is made cyclic.

5. The material of claim 2 wherein R1 includes an oxygen atom linked to the silica particle, R3 being linked to the oxygen atom.

6. (Once Amended) The material of claim 2 wherein R2 includes an oxirane group represented by:

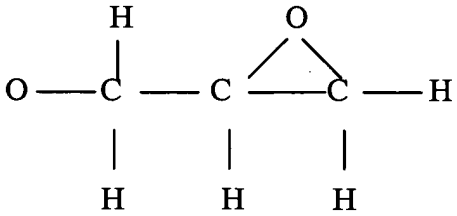


7. (Once Amended) The material of claim 6 wherein R2 is represented by:

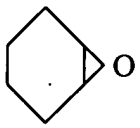


Wherein R', R'', and R''' are hydrogen or alkyl groups.

8. (Once Amended) The material of claim 7 wherein R2 is represented by:



or



9. The material of claim 1 wherein the agent acting as a cross-linking hardener and a catalyst includes both a hardener and a catalyst.

10. (Once Amended) The material of claim 1 wherein the cross-linking hardener is selected from the group consisting of an imidazole and its derivatives, an amine, a triphenylphosphine, an anhydride, a polyamide, a polyamide amine, a phenolic resin, and an onium salt.

11. The material of claim 1 wherein the catalyst is selected from the group consisting of an imidazole and its derivatives, an imidazolium salt, a triphenylphosphine, a tertiary amine, and an onium salt.

12. (Twice Amended) The material of claim 1 wherein the fluxing agent is dissolved in a mixture of the epoxy-based resin and the agent acting as a cross-linking hardener.

13. The material of claim 1 wherein the fluxing agent is selected from the group consisting of an organic carboxylic acid, a polymeric fluxing agent, and an organic compound that contains one or more hydroxyl groups.

14. The material of claim 1 further comprising:

an adhesion promoter.

15. The material of claim 14 wherein the adhesion promoter is selected from the group consisting of a silane coupling agent, an organo-ziconate, and an organo-titanate.

16. The material of claim 1 further comprising:

a non-iomic surfactant.

17. (Once Amended) The material of claim 16 wherein the surfactant is selected from the group consisting of polyol, a siloxane compound, and a fluorinated compound.

18 The material of claim 1 further comprising:

fused silica.

19. The material of claim 1 further comprising:

silver flakes.

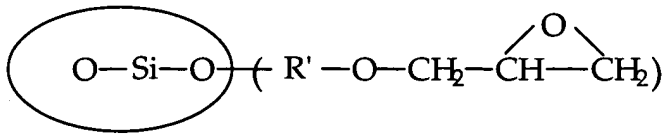
20. The material of claim 1 further comprising:

thermally conductive particles.

21. The material of claim 20 wherein the thermally conductive particles include a material selected from the group consisting of silicon nitride, silicon borate, alumina, diamond, and silicon oxide.

22. (Twice Amended) A no-flow underfill material comprising:

an epoxy resin including oxirane grafted silica particles and being represented by



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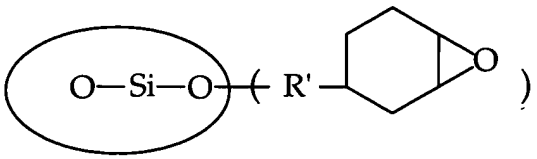


(2);

at least one agent acting as a cross-linking hardener and a curing catalyst capable of catalyzing the curing of the epoxy resin; and

a fluxing agent.

23. (Once Amended) The no-flow underfill material of claim 22 further comprising:

an adhesion promoter;

a non-ionic surfactant;

fused silica;

silver flakes; and

thermally conductive particles.

24. The no-flow underfill material of claim 22 wherein the agent acting as a cross-linking hardener and a catalyst includes both a hardener and a catalyst.

25. (Twice Amended) A semiconductor package comprising:

a package substrate;

bond pads on the substrate;

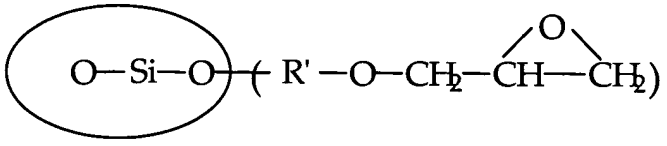
a semiconductor die;

contact pads on the semiconductor die;

a respective conductive bump on each contact pad, the die being located so that each bump is in contact and attached to a respective bond pad; and

an underfill material filling regions between the bumps and including at least an epoxy-based resin including oxirane grafted silica particles.

26. (Twice Amended) The semiconductor package of claim 25 wherein the epoxy-based resin is represented by:



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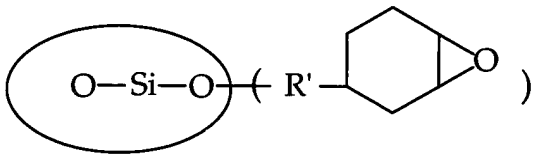


28. (Amended) A semiconductor package comprising:

a package substrate;

bond pads on the substrate;

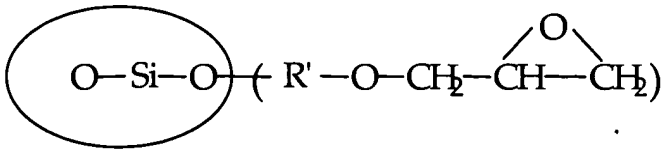
a semiconductor die;

contact pads on the semiconductor die;

a respective conductive bump on each contact pad, the die being located so that each bump is in contact and attached to a respective bond pad; and

an underfill material filling regions between the bumps and including at least an epoxy-

based resin including oxirane grafted silica particles, and being represented by:



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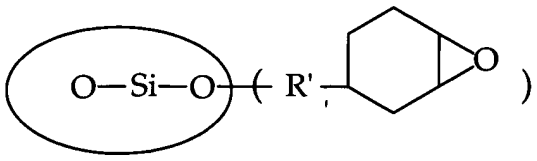

(2)